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AUTHOR Harker, W. John
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ABSTRACT

To comprehend effectively, students must be taught how to analyze the particular comprehsnsion tasks before them in order to determine the specific thinking processes necessary for the solution of these tasks at the appropriate level of difficulty. Rather than teaching specific comprehension skills in an abstract, formulistic manner separated from the immediate demands of content area reading, it is more realistic to teach pupils a flexible, generalized approach to comprehension tasks which can be applied directly in a variety of contextual settings. The specific demands of content area reading require pupils to apply comprehension skills in different ways, depending on the nature of the content material being read and the pupils' purpose for reading it. As pupils grow in their ability to analyze and solve comprehension tasks in different content areas, their ability to use the skill appropriate for comprehension in these areas will develop concomitantly. (FR)

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Teaching Comprehension in Content Areas

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W. John Harker
Memorial University of Newfoundland

What is comprehension? Ultimately, the most effective method for teaching comprehension will depend upon a definitive answer to this question. However, the mental processes through which pupils understand what they read remain a topic of continuing controversy among psychologists and educational researchers.

Despite the lack of a definitive explanation of comprehension, we as teachers are obliged to form in our minds some idea of how pupils comprehend. This is necessary

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in order to rationalize our teaching procedures in the classroom.

A working definition of comprehension is possible for teaching purposes. This definition provides insight into how pupils think when they comprehend, and how they can be taught to read with greater comprehension.

Comprehension can best be viewed as a problem-solving process--a process which occurs in the mind of the reader in response to his perceived need to perform a specific task for a particular purpose. In performing different comprehension tasks, pupils' thinking skills are exercised in different ways depending on the particular comprehension task at hand. Hence, the nature of different comprehension tasks determines the methods for solving them. Since no two comprehension tasks are identical, the methods pupils will use to solve them differ in each case.

If this approach to understanding comprehension is accepted, the need to teach pupils flexible strategies to perform comprehension tasks is obvious. This need for flexibility is doubly apparent when one considers the broadening range of reading assignments which pupils encounter as they move through the elementary and into the secondary grades.

Learning to read is a developmental process. At each stage in a pupil's progress through school, he is expected to read and to understand increasingly demanding material in a widening spectrum of content areas. This is particularly true in the intermediate and secondary grades where learning becomes progressively more specialized in different content

areas and where increasing emphasis is placed on independent reading and study in these areas.

Learning in the various content areas requires pupils to perform certain comprehension tasks which are to a considerable extent particular to the subjects concerned. Research has shown consistently that because students read well in one particular content area, they do not necessarily read well in other content areas. Moreover, these discrepancies tend to widen when higher-level comprehension is required.

For example, the basic comprehension task of determining the main idea in a paragraph must be executed somewhat differently by a student reading a novel in English than by the same student reading the introduction to a science laboratory. In the novel, the reader will have to integrate the main idea of the paragraph with ideas carried forward from previous parts of the novel. These ideas are likely to be of an imaginative and abstract nature. Conversely, a paragraph from the introduction to a science laboratory may constitute the entire introduction or at least the major part of it and therefore the student will not bring to this reading assignment a frame of reference derived from previous reading. The content of this paragraph will probably be technical and the manner of expression concrete yet complex. While the pupil's task in each of these examples is nominally the same, the nature of the task varies considerably as determined by the content of the material being read.

The increasing complexity and variety of reading material encountered by pupils in the various content areas inevitably results in comprehension difficulties. These difficulties are to be expected and they can and should be dealt with as part of normal content area teaching. If pupils are expected to learn by reading and studying content material, they must be actively taught how to effectively comprehend this material. Most pupils will not learn to comprehend without being taught how to. Teaching how to learn content material is a rather different activity from just teaching content material. Unfortunately, emphasis is usually placed on the latter at the expense of the former. The current concentration on independent study should not be confused with independent learning. Students must be taught how to comprehend if independent learning is to result.

If the comprehension of different content material is something which pupils have to be actively taught, the next question is how does one go about it? The most common approach to teaching comprehension is through questioning. Most textbooks on reading methods will suggest that the depth of pupils' understanding of what they read will be determined by the teacher's success in posing thought provoking questions based on the reading material.

Despite the prevalence and logic of questioning as a means of developing pupils' comprehension, certain difficulties are apparent in the method. In one of the few attempts to determine exactly how questions are asked and answered in

the classroom, Guszak (1967) studied pupils in the second, fourth, and sixth grades. In seeking to establish what kinds of questions teachers ask, Guszak found that over seventy percent of teachers' questions were at the literal level of comprehension. These questions required pupils to recognize information stated directly in reading selections, and to recall factual material previously read. Only fifteen percent of teachers' questions required pupils to evaluate what they read, and even here, inspection of the questions revealed that they nearly all demanded a simple "yes" or "no" response from pupils. Only thirteen percent of teachers' questions demanded pupil responses at the inferential level of comprehension.

In the second part of his study, Guszak sought to determine the extent to which pupil responses actually answered teachers' questions. The highest incidence of correct responses was at the second grade level. This finding appeared to result from second grade teachers questioning more precisely than did fourth and sixth grade teachers. Fourth and sixth grade teachers, while questioning predominantly at the literal level, appeared unsure of the correct answers to the factual questions they were asking. This resulted in pupil responses being accepted as correct when in fact they were incorrect.

Guszak also investigated the nature of teacher-pupil interaction during the questioning process. He found that the most common type of exchange involved a single teacher question followed by a single correct pupil response. He

also found that this type of exchange frequently occurred within an expanded framework wherein the teacher initially asked the question as a guide for pupils, and then repeated the same question in order to elicit the correct pupil response.

It seems clear from Guszak's research that although a great many questions are asked by teachers in an effort to further pupils' comprehension, the quality of these questions and their effectiveness in promoting pupil comprehension is limited. As Guszak concluded, the emphasis on the recall of trivial details which characterizes many teachers' questions results in the obscuring of such basic literal understandings as plot development, cause and effect relationships, and sequences of events. Moreover, questions requiring pupils to translate into their own words the information contained in reading selections, even at the literal level, are absent from most teachers questioning repertoires. Rather than gaining a clear understanding of what they read, Guszak concluded that pupils concentrate on anticipating the picayune literal-level questions which they have come to expect from their teachers. As Guszak states:

> About the only thing that appears to be programmed into The students is the nearly flawless ability to anticipate the trivial nature of teachers' literal questions. As evidenced by the high congruence of immediate responses, the students have learned quite well to parrot back an endless recollection of trivia.

The indictment of conventional classroom questioning strategies contained in Guzak's study demands a reassessment of questioning as a means of teaching comprehension. It would seem that the concept of exercising pupils thinking skills by asking appropriate questions is not in itself invalid. Rather, it is the actual implementation of this concept in classroom practice that causes difficulties. What is required is not a new strategy for developing pupil comprehension, but rather a different questioning technique in order to avoid the pitfalls identified by Guszak.

Generally speaking, inadequate questioning strategies derive from an overemphasis on simple-recall, literal-level questions posed within the context of a one-question, one-answer exchange between teacher and pupil. It is inevitable that, when teacher-pupil interaction in the questioning situation is limited to a stimulus-response framework, pupils will come to anticipate questions which can be answered at the literal level of understanding, and teachers will unconsciously tend to ask this type of question thereby enforcing pupils' expectations.

What is needed is a different approach to the conventional question-answer format in order to guide pupils to a fuller understanding of what they read at the appropriate level of comprehension. The approach to questioning advocated here--which I call the task analysis approach (Harker, 1973)--extends the conventional single-question, single-answer exchange between teacher and pupil. Rather than responding to

a single question, pupils are guided to the solution of comprehension tasks by a series of questions and answers.

In order to successfully implement the task analysis approach, a series of steps should be taken by the teacher:

(1) The first step is to determine pupils' purpose for reading. This purpose will derive directly from content area lesson objectives. At this point, the primary concern of teachers is to establish the specific content area learning which is to derive from reading. This learning has first priority in the classroom; effective comprehension is the means to this end.

(2) Once pupil purpose for reading has been determined, the initial task-setting question can be formulated in terms of this purpose. This question corresponds to the conventional single comprehension question asked by most teachers. However, as will be seen in a moment, this question is followed by a series of subordinate questions which guide the pupil through successive stages to the solution of the comprehension task. The task-setting question will set the level of comprehension necessary for successful task analysis.

(3) When the initial task-setting question has been determined, the sequence of subordinate questions required to guide pupils to its solution can be formulated. The purpose of these questions is to exercise pupils' thinking skills in such a way that they will think through the task to its correct solution. Since psychologists tell us that the cognitive styles of pupils differ considerably, it is unlikely

that these questions can do more than approximate the cognitive processes actually used by pupils in their solution of comprehension tasks. However, by structuring and guiding pupils' thinking by a series of questions, pupils are far more likely to think through comprehension tasks thoroughly and to solve them at the required level of difficulty than they would in response to a single question. In determining the series of subordinate questions, the analysis of the comprehension task must be made from the pupil's point of view. Difficult though it may be, the teacher should try to get inside the heads of his pupils so as to view the task before them from their perspective. This perspective will be determined by such factors as pupils' previous school learning, intelligence, level of reading achievement, and experiential background. Once pupils' perspective on the task has been determined, the sequence of questions which will lead to comprehension can be developed.

(4) Once the thinking processes necessary to solve particular comprehension tasks have been illustrated to pupils, and once pupils have experienced success in solving specific comprehension tasks, the transfer of learning which has occurred in these situations can be encouraged in new situations. Pupils can be shown how to think through to the solutions of comprehension tasks in different content areas for a variety of purposes. In this way, independence in comprehension will be developed. To further this independence, teachers can modify their questioning strategies by requiring pupils to formulate a steadily increasing proportion of their own questions and

by demanding solutions to increasingly complex tasks.

Three examples employing different kinds of comprehension tasks will illustrate the method by which the task analysis approach may be used in the classroom with reading material from different content areas.

Often the simplest kind of comprehension task facing students requires literal understanding. Here pupils are expected to comprehend what is stated explicitly in a passage. Such a passage might contain sentences like the following one:

> Against the back of the shelf stood a row of strange-looking bottles--small round bottles of red glass, clear bottles containing a mysterious amber-hued liquid, bottles of a peculiar hour-glass shape, some bottles squat and opaque, and still others having bright green contents and standing tall and cylindrical on the shelf.

Pupils might be asked, "How many different shapes do the bottles described have?" In order to answer this question, students must be able to analyze and solve the specific task confronting them in order to provide the particular information required. This process of analysis and solution may be approximated by the following sequence of questions and answers, initially stimulated by the teacher but later conducted independently in the mind of the comprehending pupil:

> How many bottles are there? It doesn't say; all it says is that there is a row of them.

How are the bottles described? They are different colors and different shapes.

Is the shape of each bottle described? No, sometimes only the color of the bottle is described.

Ignoring the colors then, what different shapes are described? Round ones, hour-glass shaped ones, squat ones, tall and cylindrical ones.

Solution: There are four different shapes of bottle described.

A second kind of comprehension task involves inferential understanding. Here pupils must grasp what is revealed implicitly rather than stated explicitly. An example of an inferential comprehension task can be found in a reading selection containing a sentence such as the following:

His first pitching experience was when he played ball on the rooftops of apartment buildings in New York as a boy.

Pupils may be asked, "Do you think that the person referred to in this sentence grew up in a wealthy family?" The analysis and solution of this task can be approximated by the following sequence of questions and answers:

Does it say whether they were wealthy? No. (Therefore a literal solution is impossible; the solution must be inferred.)

Where did he play ball? On the rooftops of apartment buildings.

Why did he play there? It doesn't say, but probably because there was nowhere else for him to play.

Would he have played somewhere else if he was from a wealthy home? Probably he would have, in his own yard or in the kind of park that you see in wealthy neighbourhoods.

Solution: He didn't grow up in a wealthy family.

Another kind of comprehension task facing students demands critical understanding. Here students must make judgments concerning the material read based on their backgrounds and experiences. For example, students might read a statement such as the following:

The reasons for the outbreak of World War I have never been accounted for accurately.

A critical understanding of this statement demands that students assess its accuracy. Questions which might be asked include:

Is the author of this statement a recognized authority?

What support does the author provide for his statement?

Where is the statement made--in a popular article, in a scholarly journal, in an advertisement for a new book, etc?

Is this a recent statement?

Do other authorities agree with this statement?

Where can I go to gain further information regarding the accuracy of this statement?

The manner in which these questions are answered and the extent to which they can be answered will depend on the different backgrounds and experiences different pupils bring to the critical comprehension task. Generally, however,

questions such as these encourage students' development in critical comprehension.

The emphasis throughout this method is on the active rather than passive teaching of comprehension. To comprehend effectively, students must be taught how to analyze the particular comprehension tasks before them in order to determine the specific thinking processes necessary for the solution of these tasks at the appropriate level of difficulty. One result of this emphasis on thinking is a relative lack of emphasis in skills development. Rather than teaching specific comprehension skills in an abstract, formulistic manner divorced from the immediate demands of content area reading, it is more realistic to teach pupils a flexible, generalized approach to comprehension tasks which can be applied directly in a variety of contextual settings. The specific demands of content area reading require pupils to apply comprehension skills in different ways depending on the nature of the content material being read and pupils' purpose for reading it. As pupils grow in their ability to analyze and solve comprehension tasks in different content areas, their ability to use the skills appropriate for comprehension in these areas will develop concomitantly.

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